GPS CF Card
User's Manual

GPS 9534

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1. INTRODUCTION

1.1. Overview

The GPS 9534 GPS CF Card receiver is a Global Position System Receiver with a type I compact flash interface. It has a standard NMEA output and compatible with all devices accepting a Type I and Type II compact flash slot. The GPS 9534 GPS CF Card which include a build in antenna and compatible to laptop, PDA and tablet PC will allow you to find with help of electronic map application to find your way on the streets easier.

The GPS 9534 GPS CF Card is in Compact Flash form-factor which is a popular form factor for both new and old generation of Windows Pocket or Handheld PCs. It is designed for easy integration with a wide range of navigation software applications. Featuring all view tracking capability, GPS CF Card provides robust performance in applications that require high vehicle dynamics and high signal blockage operations. In other words, the totally wireless Compact Flash GPS system is for the Windows Pocket PC. The customers can combine with all kinds of electronic map software and allow user to navigate worldwide, while walking, on a boat, or even in-vehicle; using a completely integrated device, eliminating cumbersome wires. Therefore, Pocket PC involving map software and GPS Compact Flash Card will have become a portable navigation device and replaced traditional GPS handheld products.

1.2. Main Features

◆ World's smallest GPS receiver in Compact Flash (CF) Type I form factor

◆ 12 Channels "All-In-View" Tracking

◆ Cold/Warm/Hot Start Time: 45/38/8 Seconds

◆ Reacquisition Time: 0.1 seconds

◆ RF connector for external GPS antenna

◆ Support Standard NMEA-0183 and SiRF Binary protocols

◆ Support Trickle Power mode Power Saving

◆ Multi-path Mitigation Hardware

◆ Onboard rechargeable backup battery

◆ Superior Sensitivity for Urban Canyon and Foliage Environment

◆ WAAS capable for improved accuracy where applicable

◆ Driver supported by Pocket PC 2002 and Windows to work with popular navigation software

◆ Dimension: 81.5 mm (including the connector) x 43.36 mm x 15 mm

◆ Power Consumption: Tracking mode 150 mA, CPU mode 35 mA, Trickle Mode 3 mA

2. APPLICATIONS

GPS 9534 CF Card receiver is a high performance, low power consumption product. The product applications are as follow.

◆Hand-Held Device for Personal and Portable Positioning and Navigation-- Handheld PC , Pocket PC, Tablet PC.

◆Automotive applications

◆Marine Navigation

◆Aviation applications

◆Location-Based Services

3. OPERATION AND TEST

3.1. Hardware Installation

1. If your PDA or laptop have Compact Flash slot just plug your Compact Flash card into the slot.

2. If you don't have the Compact Flash slot but you got a PCMCIA slot, then you can apply an adapter to connect your Compact Flash card to PCMCIA slot. In addition, you have to install the driver of socket serious I/O card and it makes the notebook or tablet computer regard the CF card as PCMCIA card.

3.2. How to test your GPS Compact Flash Card

1. First, you have to install WinFast Navigator for PDA with WinCE. It allows you to control the function of the CF card using an easy-to-use application. How to install WinFast Navigator, you can refer to **Appendix A**.
2. After you have finished installing WinFast Navigator, you can begin testing your GPS CF card. The following content is the operational note.

Application Main Screen

When you run the application, the main screen appears as shown in the figure below:

The main screen include three major parts:

1. Menu bar

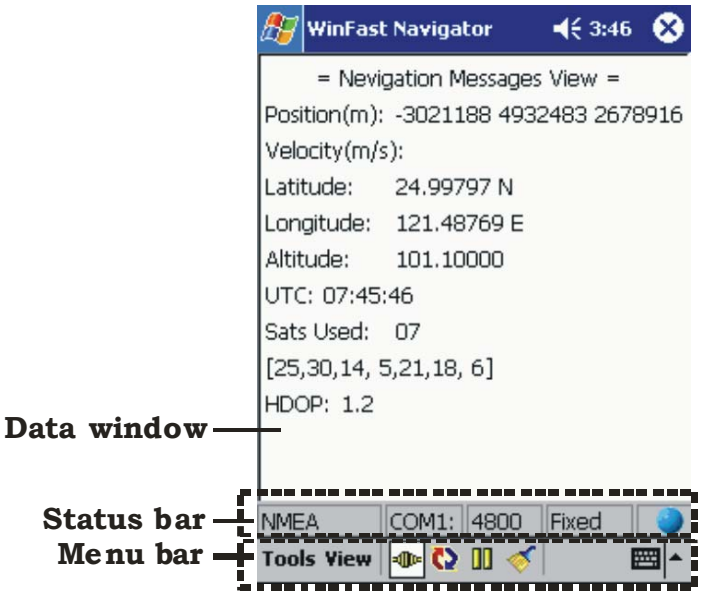
Provides accesses to all information and setting options.

2. Status bar

Shows the current status, including the connection with the GPS, and the satellite data being received.

3. Data window

Show the contents of each screen.



Reading Status Bar

Box1 Box2 Box3 Box4 Box5

Box 1

Shows the current status of connection with the GPS in one of four possible messages:

◆Disconnect:

The GPS is not connected.

◆Connect...:

Displayed when Protocol Parser fails. The reason may be that the COM port has not been correctly set up.

◆NMEA:

The data being received is in NMEA protocol.

◆SiRF:

The data being received is in SiRF Protocol.

Box 2

Indicates the COM port currently used.

Box 3

Shows the Baud Rate of the current COM port.

Box 4

Indicates whether the satellites are in their positions by showing **Fixed** or **Unfixed**.

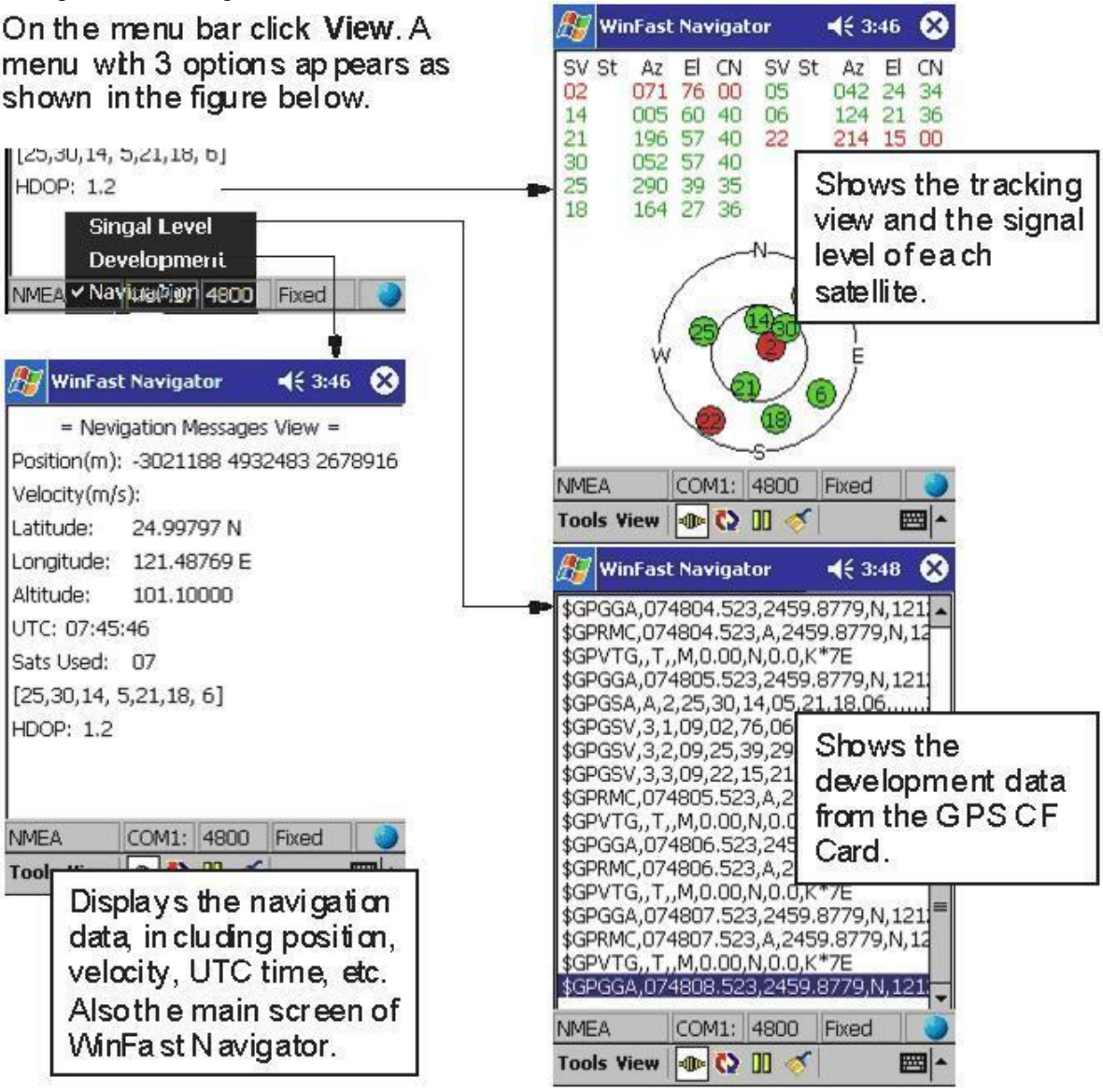
Box 5

The ball-shaped icon is the data receiving indicator.

◆White: The COM port is currently not receiving data.

◆Blue: The COM port is receiving data.

Navigation Messages



Configuration Tools

On the menu bar click **Tools**. A menu with the following options appears (see the figure on the left below):

About

Command

Connect

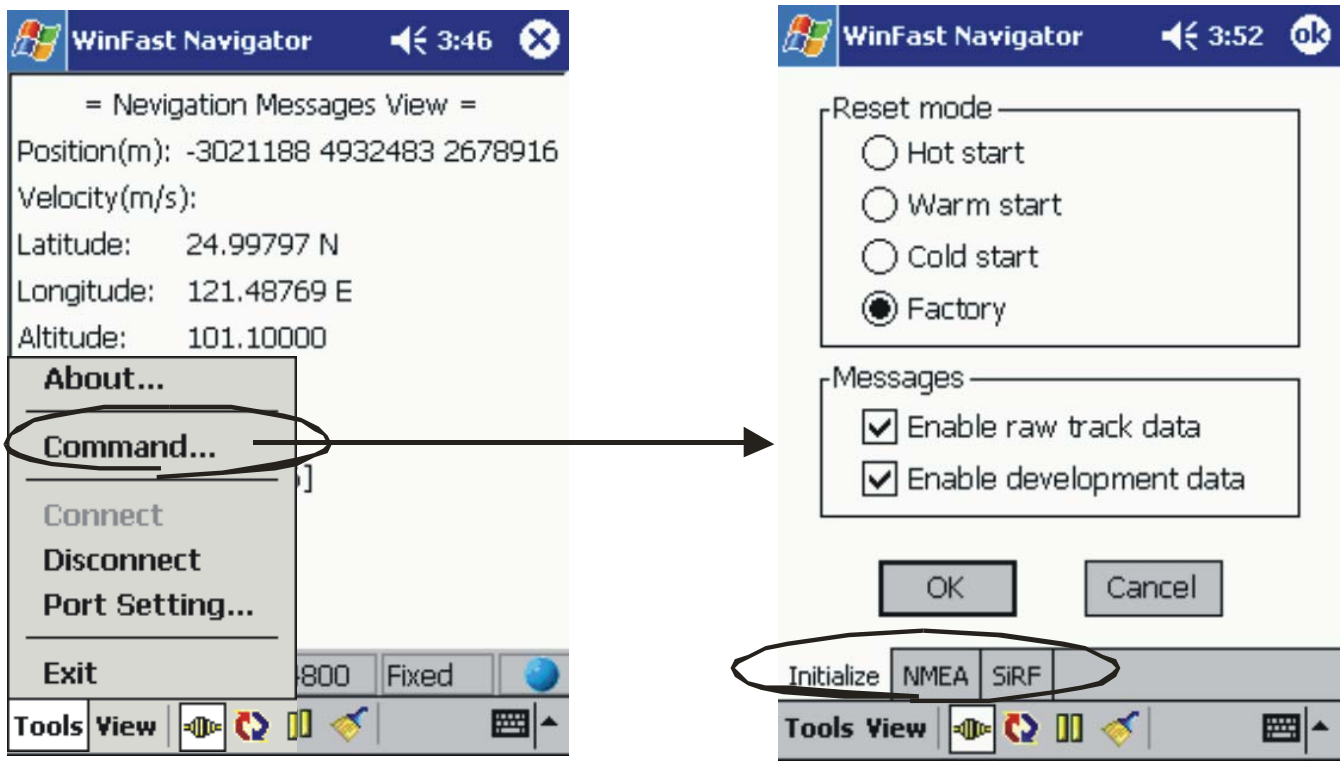
Disconnect

Port Setting

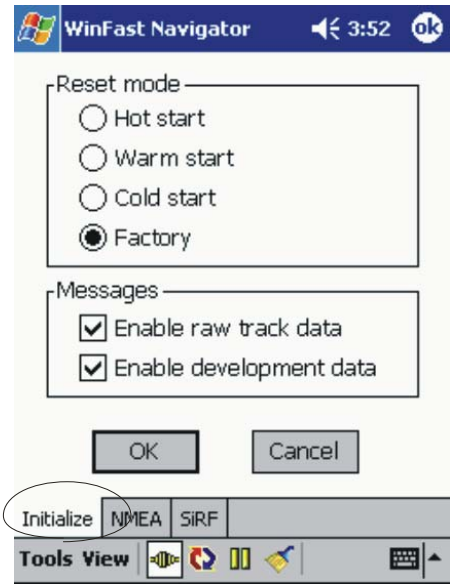
Exit

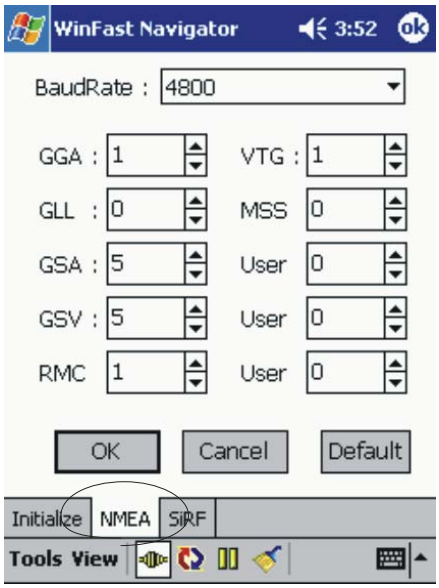
Command

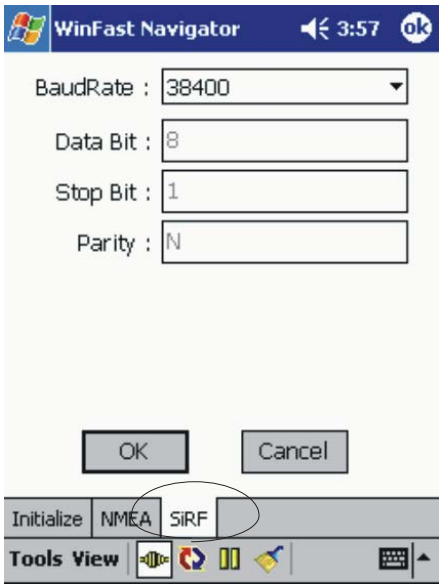
Select **Command** and an additional menu bar appears on the bottom of the data window that includes 3 tabs: **Initialize**, **NMEA**, and **SiRF** (see next page)..



The Initialize, **NMEA**, and **SiRF** configuration screens under **Command** are as shown in the figures below:







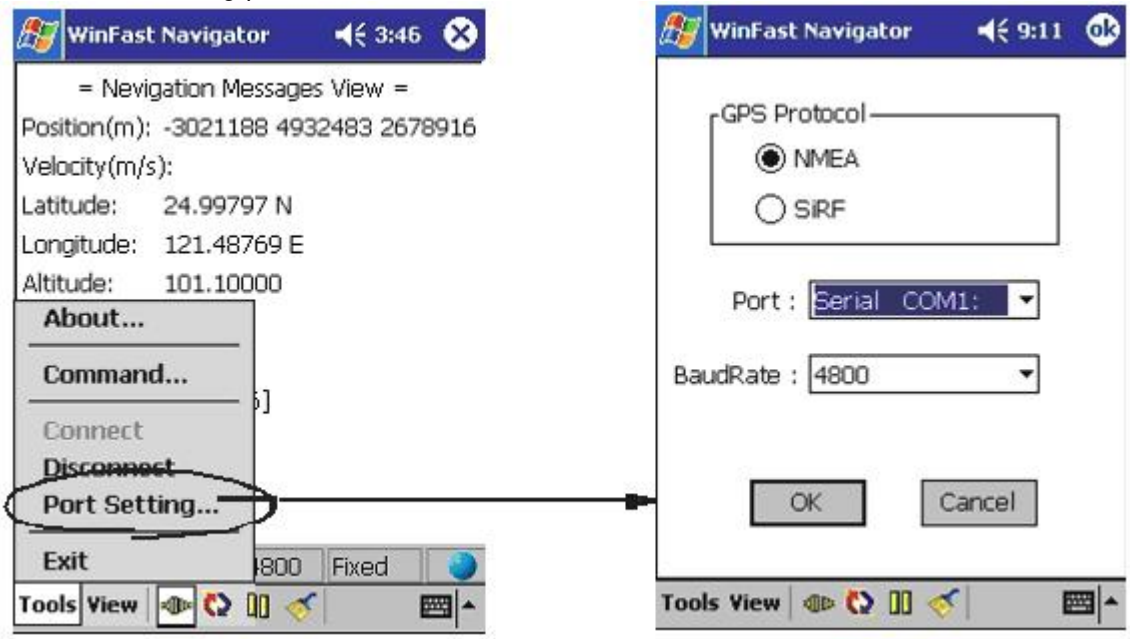
Initialize screen provides options for the reset mode and protocol data transmission.

The NMEA screen allows you to control how the NMEA messages Are being out put.

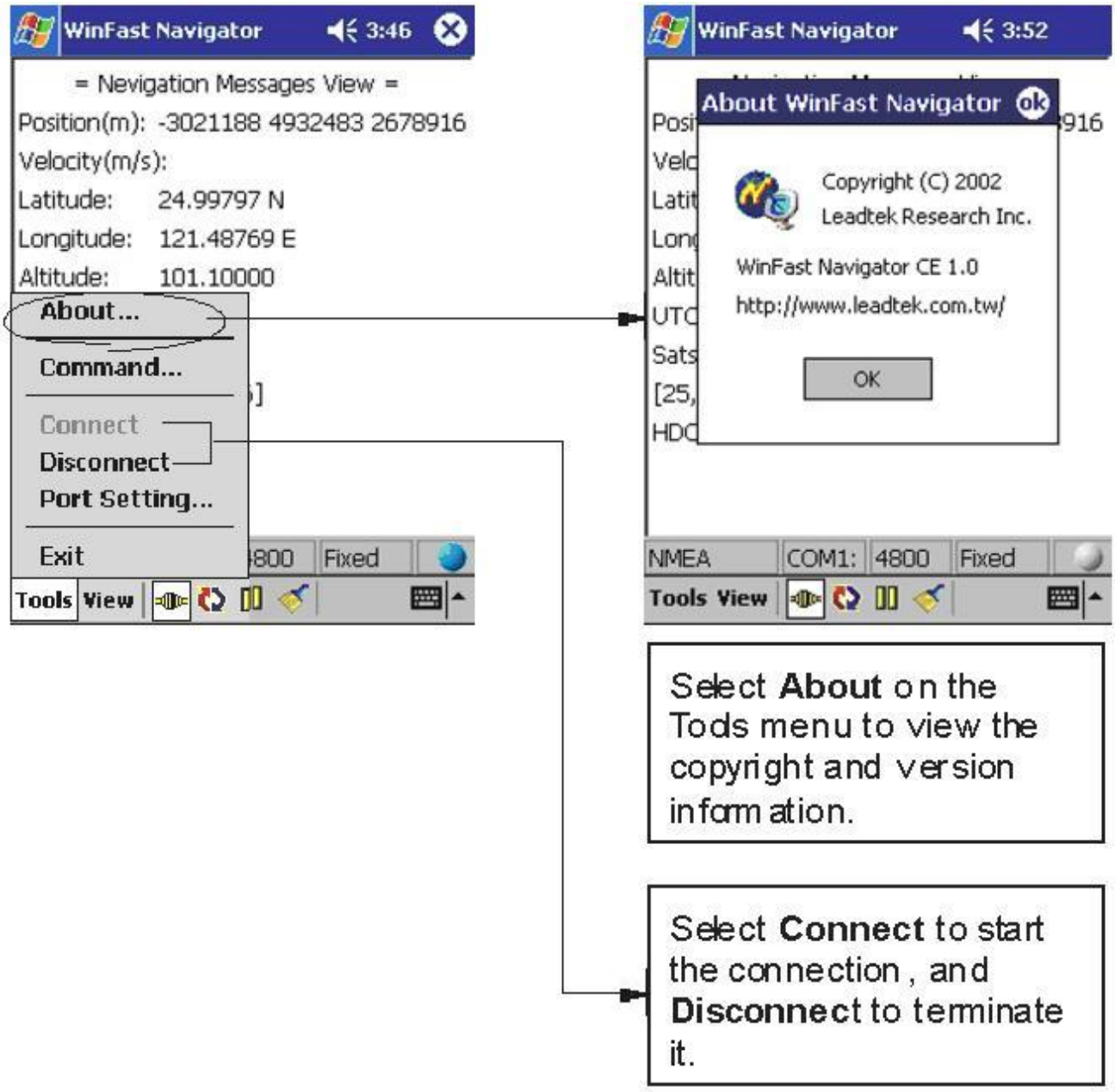
The SiRF screen allows you to set the data transmission

Port Setting

Select Port Setting from the Tools menu and the Port Setting screen appears. It allows you to set the GPS protocol and the connecting port.



Connect, Disconnect & About



Quick Buttons on Menu Bar

Connect

Press to build connection with the GPS module.

: The GPS is not connected.

: The GPS is connected.

Automatically detect communication protocol

When this button is pressed, the system will automatically detect the GPS Protocol and Baud Rate of the port currently enabled.

Pause

Press to pause the data displayed in Development View.

Clear

Press to clear the data in Development View.

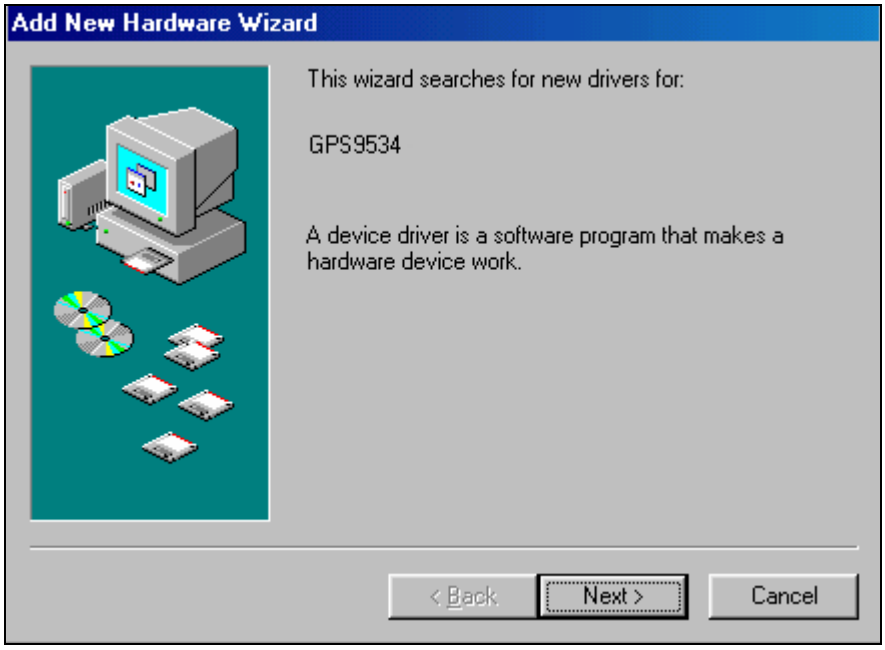
4. Installing the GPS CF Card 9534 in a Notebook

4.1 In case that your Notebook doesn't support CF slot, you can use a CF Card PCMCIA Adapter which enables the CF Card to be used in PCMCIA slot.

4.2 Make sure that the **GPS CF Card 9534** is inserted correctly into the CF Card PCMCIA Adapter.

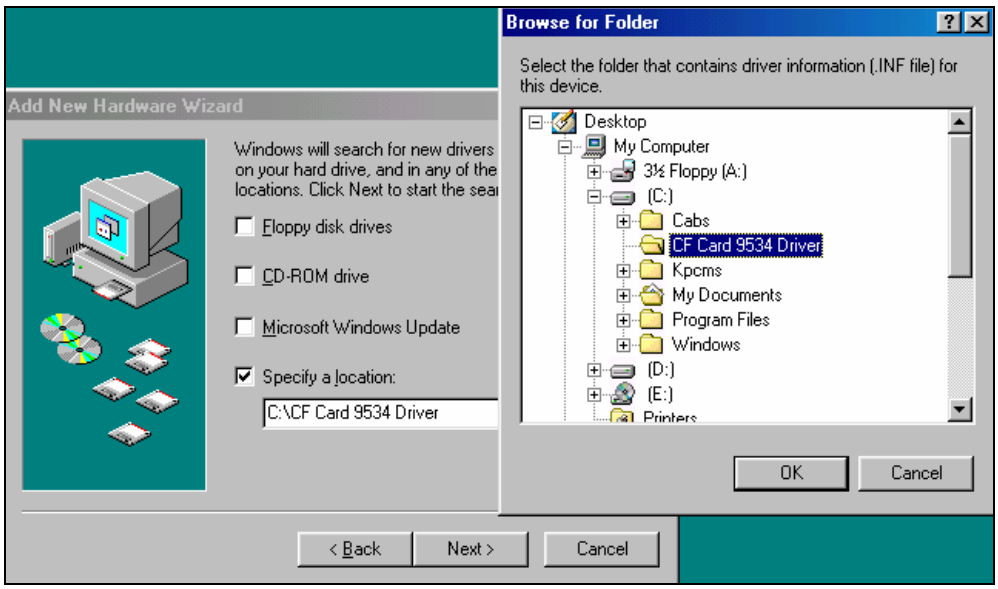
4.3 Insert both **GPS CF Card 9534** and the CF Card PCMCIA Adapter into the slot, as shown in the figures below.

4.4 After the **GPS CF Card 9534** has been inserted Windows will detect the new device.

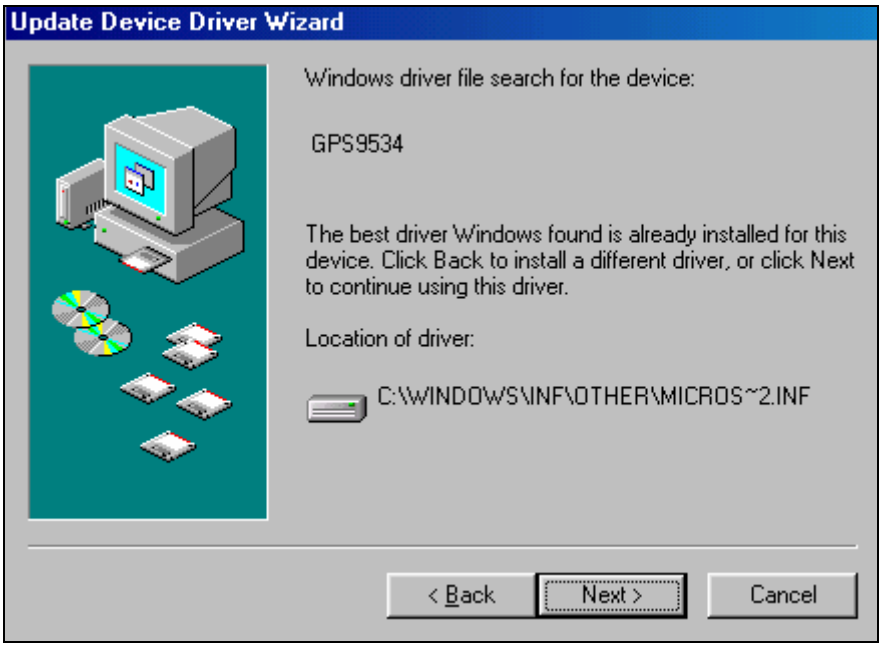


4.5 Follow the wizard in order to setup the **GPS CF Card 9534**.

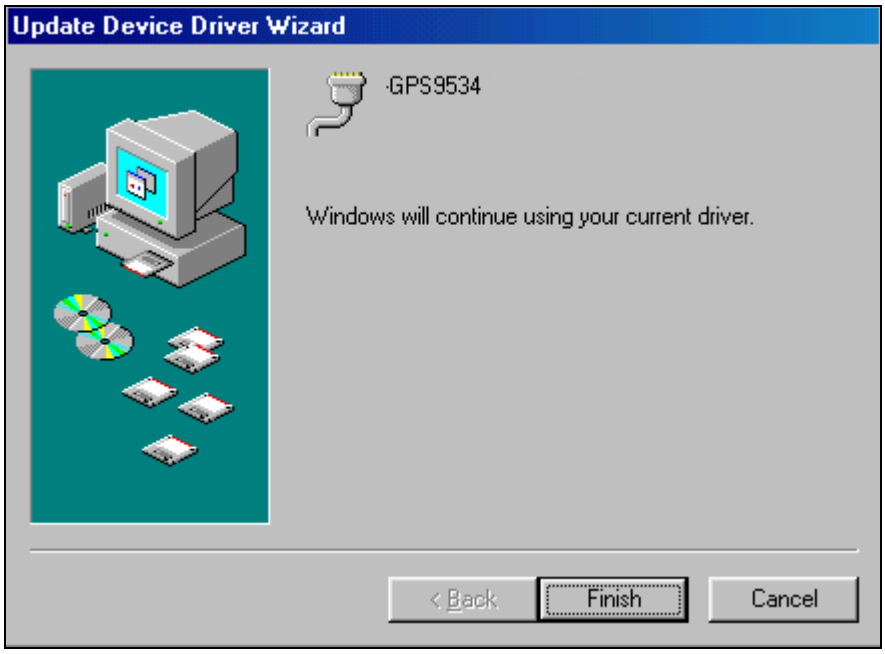
4.6 Select the location of the driver of the **GPS CF Card 9534** in order to continue.



4.7 Once Windows has detected the driver, click on **Next** and then click on **Finish**.



4.8 Note that you have the steps are similar if you update the driver from the Control Panel.



6. Technical Specifications

Electrical Characteristics		
General	Frequency	L1, 1575.42 MHz
	C/A code	1.023 MHz chip rate
	Channels	12 channel parallel tracking
2 Accuracy	Position	15 meters, 2D RM 7 meters 2D RMS, WAAS corrected 1-5 meters, DGPS corrected
	Velocity	0.1 meters/second
	Time	1 microsecond synchronized to GPS time
Datum	Default	WGS-84
	Other	selectable for other Datum, please refer to Appendix B
Acquisition Rate	Reacquisition	0.1 sec., average
	Snap start	2 sec., average
	Hot start	8 sec., average
	Warm start	38 sec., average
	Cold start	45 sec., average
Dynamic Conditions	Altitude	18,000 meters (60,000 feet) max.
	Velocity	515 meters/second (1000 knots) max.
	Acceleration	4g, max.
	Jerk	20 meters/second^3, max.
Power	Main Power	3.3VDC±10%
	Supply Current	110 mA Typical (Without active antenna at 3.3V)
	Backup Power	+2.2V to 3.1V
Main Interface	Hardware	Compact Flash – CF type I
	Software	Emulated COM-port (Auto Select)
	Protocol messages	NMEA output protocol Baud rate: 4800bps Data bit: 8 Parity: N Stop bit: 1 Output format: GGA(1sec), GSA(5sec), GSV(5sec), RMC(1sec),VTG(1sec) Optional: SirF binary

Environmental Characteristics	
Operating temperature range	-40 deg. C to +70 deg. C
Storage temperature range	-55 deg. C to +85 deg. C
Operation Humidity range	5% to 95% No condensing

Physical Characteristics	
Length	3.21” (81.50 mm)
Width	1.71” (43.36mm)
Height	0.59” (15 mm)
Weight	34g
Antenna connector	MC PLUG type <Note>: The device disable internal antenna when connected with external antenna.